Date of Application, 19th June, 1888
Complete Specification Left, 14th Mar., 1889
Complete Specification Accepted, 11th May, 1889

A.D. 1888, 19*th* *June.* N° 8952.

PROVISIONAL SPECIFICATION.

An Improved Pill Rounding Machine.

I Robert Mullard of 46 Drakefell Road St. Catherine's Park Hatcham, London S.E. Chemist do hereby declare the nature of this invention to be as follows :—

The object of my Invention is the production of a machine by which pills can be rounded much more rapidly than by the well known hand method ; which is performed by rotating the irregular shaped Pills between a disc of Iron or wood having a rim corresponding to the diameter of the Pills, and a slab of marble, wood or other suitable substance, in such a manner that while the pills are carried over a considerable surface they revolve on an ever changing axis.

In carrying out my Invention I obtain the necessary motion for rounding the Pills in the following manner.

I provide a screw having a cylindrical barrel and a round thread the groove of which corresponds in size to that of the pill to be rounded and the thread of such depth that a segment of the Pill projects above it.

This screw, which may be made of brass copper, wood, Gutta Percha, India rubber or any suitable substance and of any length or diameter and may be coarse or fine in pitch, is made to revolve in a tube made of glass, brass, wood, india rubber, Gutta Percha or any or all of these combined, or any other suitable substance and of such diameter that the segment of Pill projecting above the thread of the screw, as above described, comes in contact with the surface of the tube so that when the screw is revolved the pills are propelled along the groove of the screw from one end to the other, according to the direction in which the screw is revolved, at the same time they revolve on an ever changing axis. I feed the pills into the screw by means of a suitable hopper connected with the tube while the other end of the tube contains a suitable opening for conveying the finished Pills away.

I also provide an arrangement by which the tube may be revolved at the same time as the screw, or alone, in a direction with, or opposite to that of the screw. The screw & tube being worked by any suitable gearing.

[*Price 8d.*]

It is not necessary, in carrying out my invention, to have a seperate tube and gearing for each Screw as the Screws may be all made of the same length and diameter, the only difference being in the size of the grooves and the depth of the thread, so that pills of different size may be rounded in the same tube by merely changing the screw, provision being made to effect this.

I also provide an arrangement by which the pills after they have passed through the machine, as above described, fall into the hopper of another similar machine the screw of which revolves in the opposite direction to that of the first one this second machine being worked by suitable gearing in connection with the first one.

The whole of the above described mechanism is mounted on a suitable base so as to be worked by hand or power.

Dated this 19th day of June 1888.

ROBERT MULLARD.

COMPLETE SPECIFICATION.

An Improved Pill Rounding Machine.

I ROBERT MULLARD of 46 Drakefell Road St. Catherine's Park Hatcham London S.E. Chemist do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

The object of my Invention is the production of a machine by which Pills can be rounded much more rapidly than by the well known hand method, which is performed by rotating the irregular shaped Pills between a disk of Iron or wood, having a rim corresponding to the size of the Pills to be rounded, and a slab of marble, wood or other suitable substance in such a manner that while the pills are carried over a considerable surface they revolve on an ever changing axis.

In carrying out my Invention I obtain the necessary motion for rounding the Pills in the following manner, and in order that my Invention & the manner in which it is put into practice may be understood reference must be made to the accompanying drawings, which are to be taken as part of this Specification and read therewith, and in which like parts are marked with the same reference letter.

Fig. 1 is a longitudinal section through the centre of the machine shewing the screw D.—Fig. 2 is a transverse section through the hopper J. with the screw D. removed.

A is a light frame of Iron or suitable construction carrying at a suitable height the bearings B. B.—C is a tube of brass or other suitable substance of any length or diameter, the inside of which is made as smooth as possible and is supported by the bearings B. B. and kept in position by the screws P. P.—D is a screw made of brass or other suitable material as before described having a straight barrel and rounded thread of any diameter and pitch, the grooves of this screw are made quite round and of a width corresponding to the diameter of the pills to be rounded and of such depth that a segment of the pill projects above the thread of the screw.

This screw D, which may be either a left hand or a right hand screw, fits easily into the tube C and is attached to one end of a screwed spindle E the other end of the spindle carries the pulley H—The cap G having an internal thread screws upon the end of the tube C, keeps the screw D from moving endways and forms a bearing for the spindle E.

Motion is given to the screw D by means of a band connecting the pulley H with the hand wheel I.—The Pills are fed into the grooves of the screw D by means of the hopper J. at the bottom of which is a slot K in the tube C.—The Pills are discharged at the open end of the tube C into any suitable vessel O, the discharge being accelerated by inclining the tube C from the feeding end, this is effected by having one of bearings B. B higher than the other. To prevent the Pills from becoming jammed & cut between the edge of the slot K and the thread of the screw D the tube C, at the edge of the slot K, is curved upwards as shewn at L. A slide M is fitted to the hopper J. (see fig. 2) for regulating the flow of Pills into the slot K. Another slide N is put in one side of the hopper for cleaning purposes—in the drawing the Hopper J. and Slot K are shewn at the top of the tube C.

I do not confine myself to this position as they may be placed on any part of the circumference of the tube C, the shape of the hopper J. being altered to suit the different positions. The screw D as shewn at fig. 1 bears upon the tube C so that the pills take the weight of the screw D as they pass beneath it but where no weight is required I connect the free end of the screw D. with a spindle & cap similar to E and G, the pills being discharged through a suitable opening at the bottom of the tube C.

In practising this Invention a screw D having grooves corresponding to the size of Pills to be rounded is screwed upon E the screw D is then placed in the tube C, the cap G is screwed on to end of tube C the hand wheel and pulley are connected by a band, the unrounded pills are placed in the hopper J, the slide M regulated, motion is given to the screw by means of the hand wheel I, the pills are carried round in the grooves of the screw. The segment of the pill projecting above the thread of the screw comes in contact with the surface of the tube so that the pill is constantly revolved in the groove at the same time that it is carried from one end of the screw to the other, where it is discharged rounded having taken the shape of the groove of the screw.

Having now particularly described and ascertained the nature of my said Invention and in what manner the same is to be performed, I declare that what I claim is a machine for rounding Pills.

1. The combination of a screw having round grooves of various demensions capable of being revolved by any suitable motor gearing in a tube substantially as described and for the purposes set forth.
2. A tube having a hopper and slot for feeding the pills into the grooves of the screw and an opening for the discharge of the same substantially as described and for the purposes set forth.

Dated this 14th day of March 1889.

ROBERT MULLARD.

LONDON : Printed for Her Majesty's Stationery Office
By Darling and Son, Ltd.
1889.

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[This Drawing is a reproduction of the Original on a reduced scale.]

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MULLARD'S COMPLETE SPECIFICATION.

(1 SHEET)

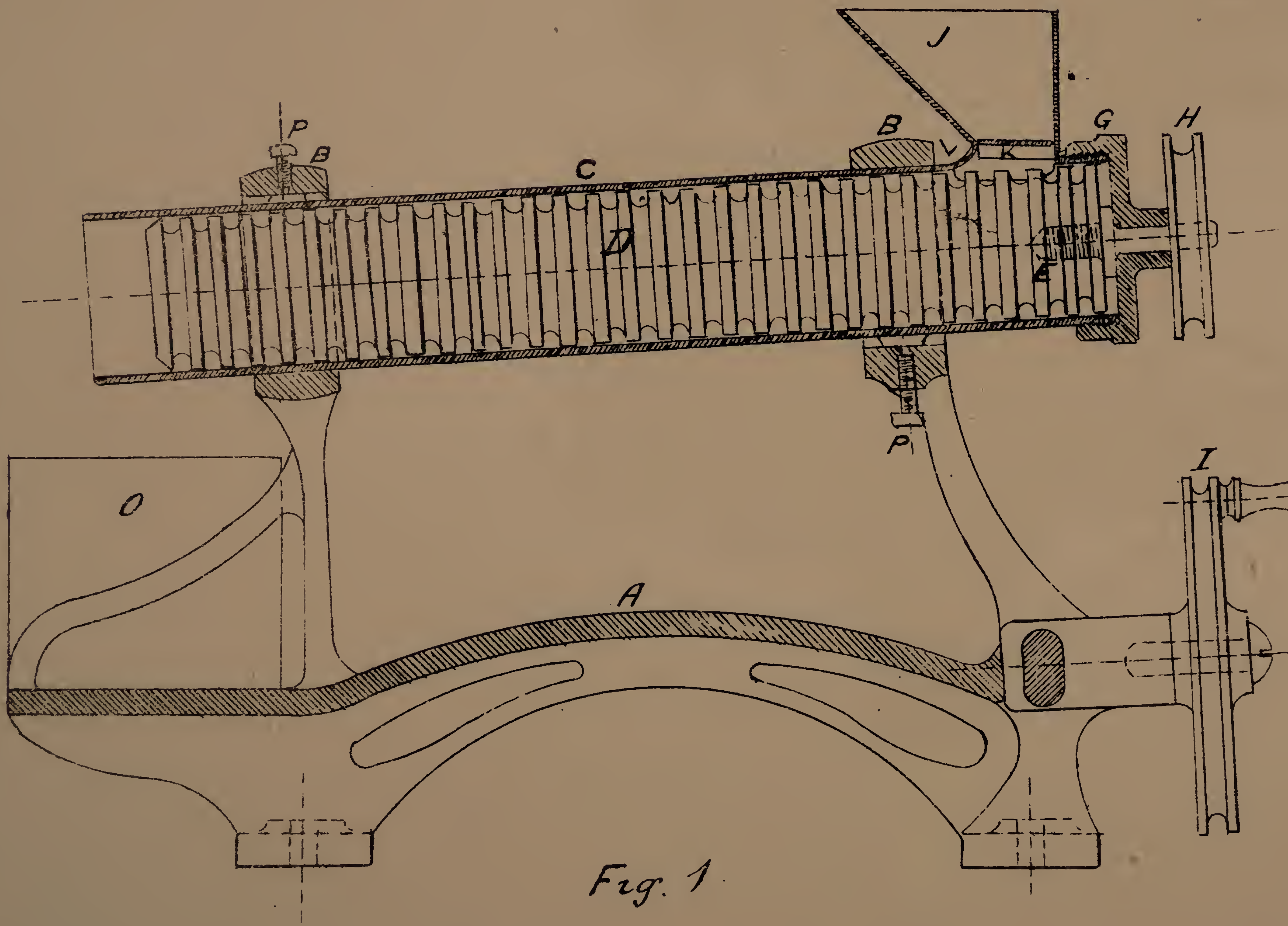

Fig. 1.

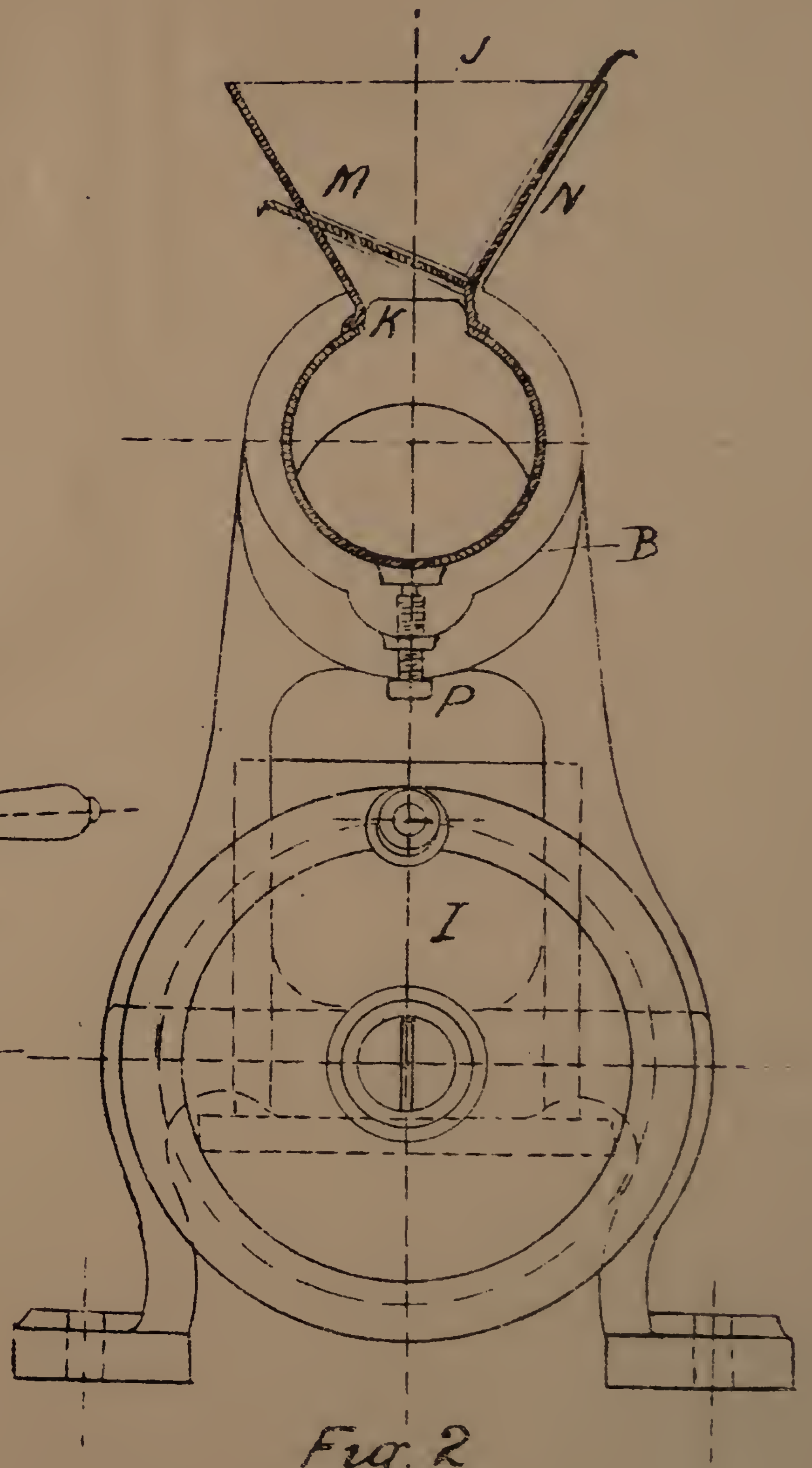

Fig. 2.

London. Printed by Darling and Son Ld.
for Her Majesty's Stationery Office. 1889.

Malby & Sons, Photo-Litho.